

‘Tying science research only to practical applications not good’

It may lead to some short-term gains, but not in the long term: Nobel laureate

STAFF REPORTER
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Tying science funding only to research that has imminent practical applications will be very bad in the long run, says physicist Anthony J. Leggett, who won the 2003 Nobel prize for his work on low-temperature physics.

The 80-year-old's comments come in the backdrop of fears of stagnation in Indian government spending on science or recent emphasis on research institutes to raise their own funds and government focus only on application-oriented science.

“This is a very bad approach. It may lead to some short-term gains, but not in the long term. There are many examples that show encouraging curiosity-driven science has led to long-term scientific gain. These gains may be difficult to predict in advance, but this approach has worked well for the U.S. and Europe and should work well here too,” said Sir Leggett, who was in the city for a two-day symposium held in



Sir Anthony James Leggett along with other delegates at the symposium in honour of the Nobel laureate's 80th birthday, in Bengaluru on Monday. ■ K. MURALI KUMAR

the honour of his 80th birthday, at Raman Research Institute. While there are a few instances of private benefactors of private institutes supporting curiosity-driven science – which aims to explore answers to particular questions rather than come up with real-world applications – it has to be largely up to governments to ensure scientists are allowed to pursue their curiosity, he said.

Future of physics

The Nobel laureate has been a pioneer in low-tempera-

ture physics, superconductors and super fluids, while his works have been influential in quantum research. Addressing the symposium on the future of physics in the 21st century, Sir Leggett says future investigations into the relation of quantum mechanics and human consciousness will lead to interesting avenues. “Can we describe consciousness in quantum terms? Undoubtedly the questions we ask in this will be in the realm of physics and philosophy. After all, there are some chairs

in Oxford where physicists are called experimental philosophers,” he says.

A paradigm shift in physics is imminent, he believes, whether it is a revolution in cosmology in better understanding dark matter or dark energy, or even quantum computing and theories of superconductivity.

Prof. Rohini Godbole, who was recently conferred the Padma Shri, says the future will see particulate matter physicists revisit principles which have been the foundations of the fields. “Large Hadron Collider experiments have found Higgs Boson, but it has not found other predicted particles. Instead, it has shown us that principles used by theoretical physicists to predict particles does not seem good. For 80 years, we have relied on these principles. It is perhaps time to go back to the days of the cosmic rays discovery where we have the data in front of us and then we figure it out what particle is where,” she said.